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(54) **BRACHYTHERAPY DOSE VERIFICATION APPARATUS, SYSTEM AND METHOD**

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(57) **ABSTRACT**

A system, method and device for brachytherapy treatment verification is described herein. The verification may be in real time and may provide verification of one or more of dose, source position, dwell time and source activity. In one embodiment the invention provides a method for verifying a brachytherapy radiation treatment including processing a distribution of exposure to a brachytherapy radiation source of a two dimensional imaging array to determine a region of high exposure; obtaining one or more distribution of exposure profiles through the region of high exposure; determining a region of high value in the one or more distribution of exposure profiles; and using the determined region of high exposure and/or high value to calculate one or more brachytherapy radiation source position and/or one or more brachytherapy radiation source distance to thereby verify at least a part of the brachytherapy radiation treatment.

20 Claims, 8 Drawing Sheets